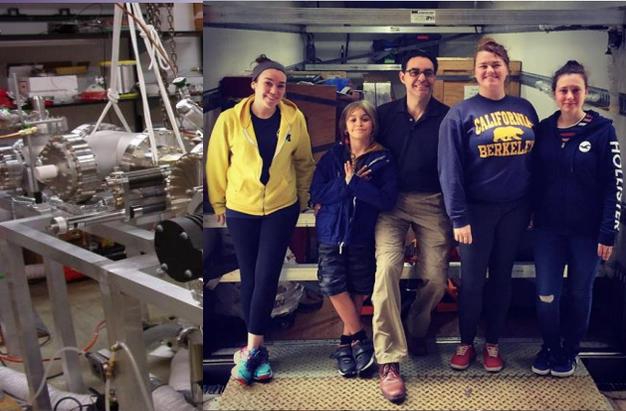


National Aeronautics and  
Space Administration



# ASTROPHYSICS



## NASA Earth and Space Science Fellowship

Astrophysics Advisory Committee

Washington, DC

October 22, 2018

## Stefan Immler & Bill Latter

Astrophysics Division

Science Mission Directorate

# NASA Earth and Space Science Fellowship (NESSF)

- SMD solicits annually through NSPIRES in November as NRA, not as ROSES element.
- Heliophysics, Astrophysics, Planetary Science, and Earth Science Division participating.
- This call for proposals solicits applications from accredited U.S. universities on behalf of individuals pursuing Master of Science (M.Sc.) or Doctoral (Ph.D.) degrees in Earth and space sciences, or related disciplines. The purpose of NESSF is to ensure continued **training of a highly qualified workforce** in disciplines needed to achieve NASA's scientific goals. Awards resulting from this competitive selection will be made in the form of **training grants to the respective universities**.
- Despite its name, NESSF is not a fellowship program but offers **training grants**:
  - NESSF does not support obtaining a degree, it supports a science investigation.
  - Students don't apply directly (proposals are submitted by supervisor).
  - Awards are not portable.

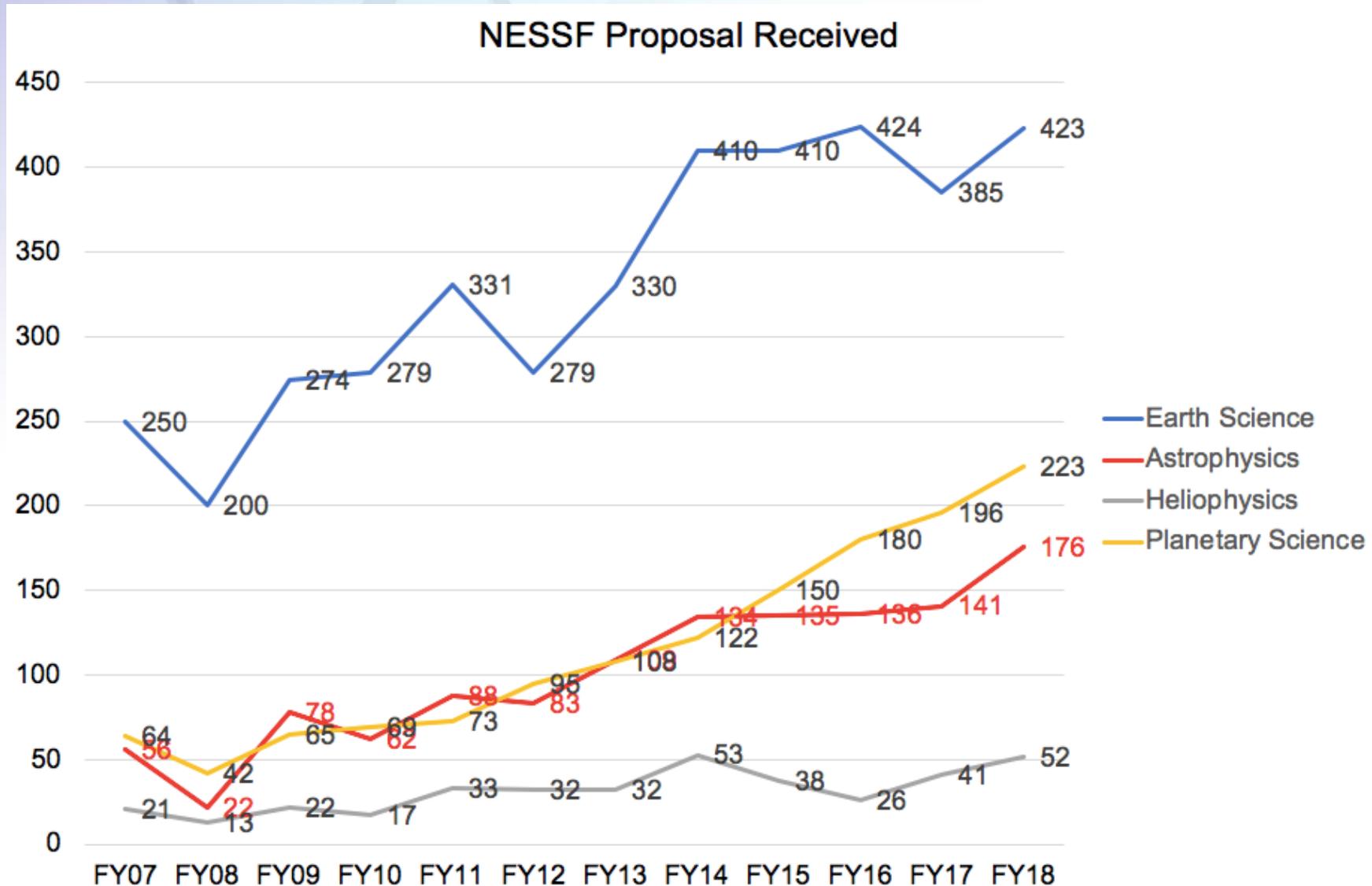
# NASA Earth and Space Science Fellowship (NESSF)

- Executive Office of the President “*Delivering Government Solutions in the 21st Century: Reform Plan and Reorganization Recommendations*” (pp. 85-86) proposes:
  - 1) Government-wide inventory and
  - 2) **Consolidation of all graduate fellowships under NSF** in order to reduce the total cost of administering those programs.
- SMD reported that it had no programs that met the reporting criteria.
- Since NESSF is not a fellowship program, it will therefore **not be considered for consolidation at NSF.**
- Upcoming changes in SMD’s independent November NRA will include a name change to help avoid the mis-characterization of NESSF as a graduate student fellowship program.

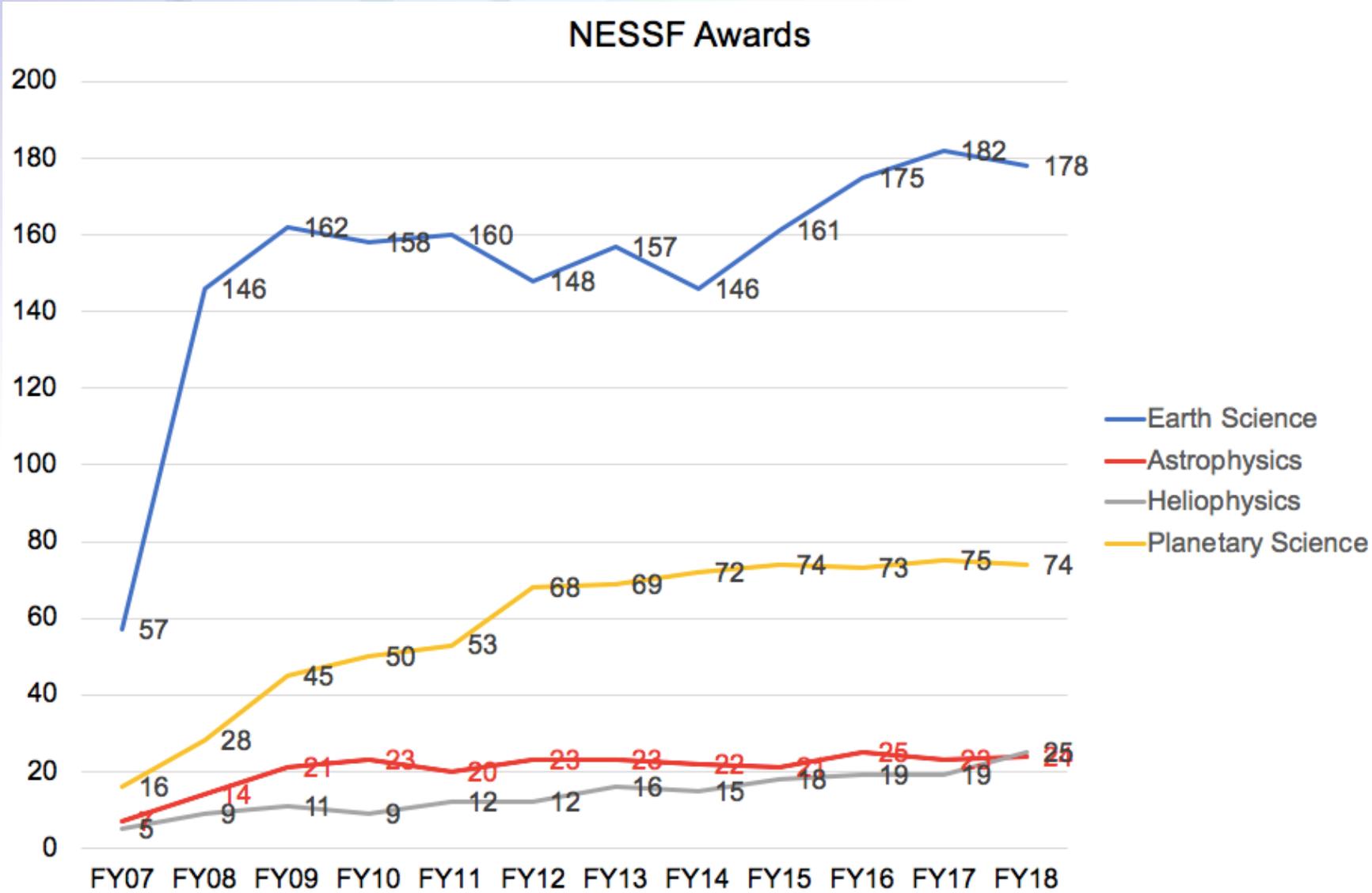
# NASA Earth and Space Science Fellowship (NESSF)

- The astrophysics NESSF selection rate is a choice by the Astrophysics Division (APD) and communicated through the NRA: “NASA expects to award approximately 6-10 new graduate fellowships in Astrophysics.”
- Benefits of NESSF are:
  - Student award;
  - Training opportunity for students on how to write proposals at early career stage;
  - Training opportunity for early career panel members on how to participate in NASA reviews.
- In addition, students are being supported through other APD R&A programs, e.g. GO programs of missions and programs like ADAP, ATP and APRA. Particularly, for suborbital investigations (balloons, sounding rockets, CubeSats), student participation is required and is an evaluation criterion.
- NESSF does not have its own funding and is coming out of the overall R&A funding line.

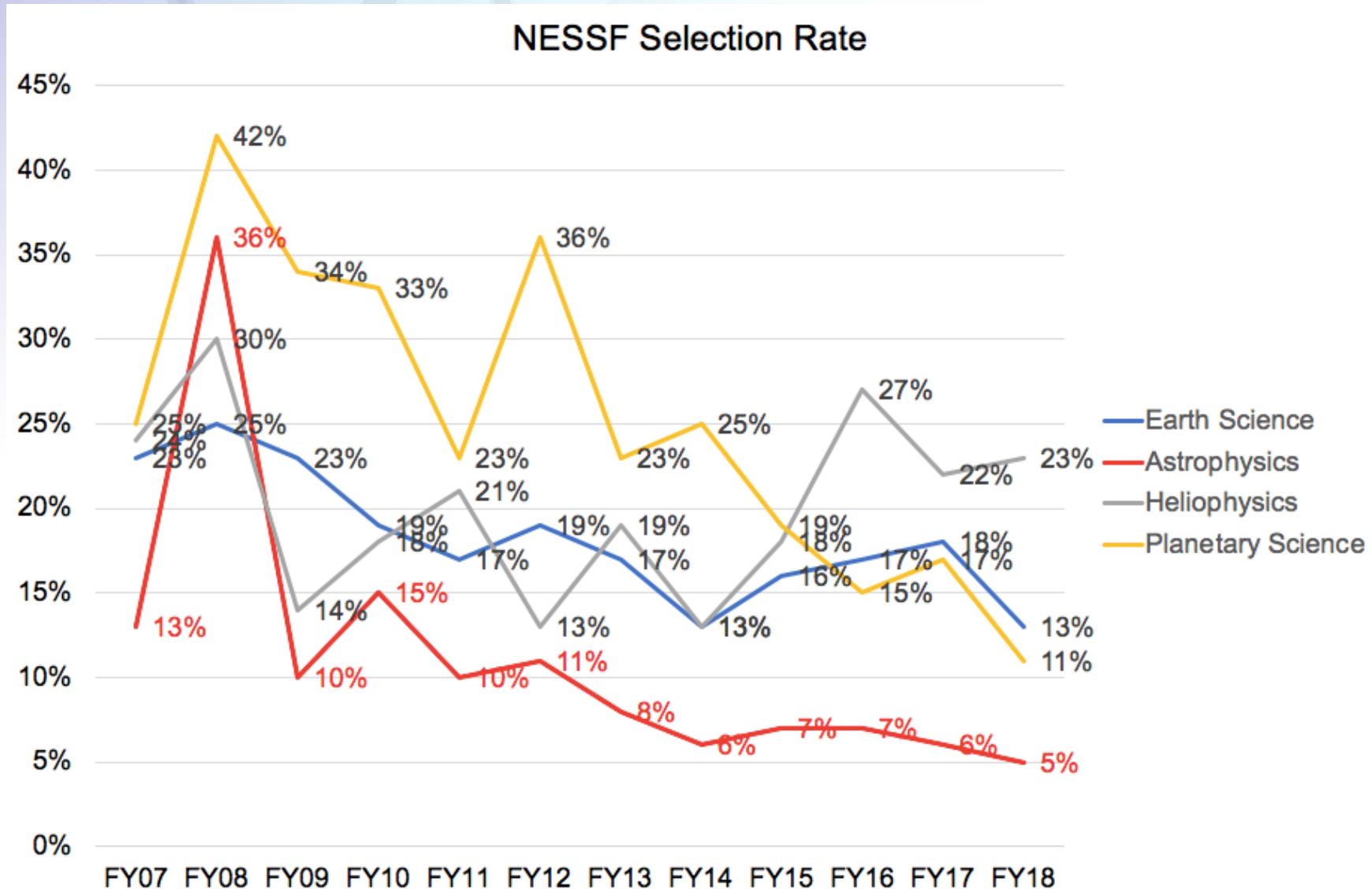
# NASA Earth and Space Science Fellowship (NESSF)



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## Stats on APD R&A Programs:

- **APD NESSF** – We support 24 NESSF @ \$45k/year ~ **\$1.1M/year for NESSF awards.**
- **GO Programs** – Most GO programs do not collect such data, except HST and Chandra
  - + - **Hubble GO** – 160 graduate students supported in 2017 = \$8M/year
  - **Chandra GO** – 46 graduate students supported in 2016 = \$2.3M/year
- **APRA-2017** – 45 graduate students supported in the selected investigations.
- **ADAP-2018** – 22 graduate students supported in the selected investigations.
- **ATP-2017** – 52 graduate students supported in the selected investigations.
- The above numbers for APRA+ADAP+ATP are for one year only. The average award duration is 3 years, so we support 3x as many students per year =  $3 \times 119 = 357$  graduate students @ \$50k/year = **\$18M/year in graduate student support.** Total budget for those programs is \$84.2M, then we spend ~20% on graduate students.
- **Total: >587 graduate students = \$29M/year in graduate student support APD-wide.**

# NASA Earth and Space Science Fellowship (NESSF)

## Stats on Non-APD Programs:

- **NSF GRFP** – 49 Astronomy and Astrophysics awards out of 12,000 total applicants and 2,113 total awards (2% of total awards; website and data download). Do not know how many Astrophysics applicants (no reply to our inquiry).
- **DOD** – No astrophysics-specific fellowships; physics only.
- **DOE** – Few or no astrophysics fellowships; fusion energy sciences, high energy physics and nuclear physics only.
- **Hertz Foundation** (non-Federal) – 140/750 applicants, no info on astrophysics awards.
- **National Physical Science Consortium** (non-Federal) – Does not get many astronomy and astrophysicist students that apply for the fellowship; we are aware of three or four applicants in either of those fields at any time.
- **Blue Waters** (Petascale computing facility at U Illinois, non-Federal) – Supporting about 10 fellows per year (for all disciplines), no info on astrophysics awards.